

## **CLAIMS**

### **What is Claimed is:**

1. An implantable medical electrical lead for transmitting electrical signals between an implantable medical device and cardiac tissue, the lead comprising:
  - a lead body defining a proximal end comprising a connector assembly configured for connection to the implantable medical device, the lead body further defining a distal region; and
  - a tip electrode located in the distal region and a second electrode spaced proximally from the tip electrode, the second electrode having a surface area in the range of 14 to 40 mm<sup>2</sup>, the tip electrode having an active surface area in the range of 3.0 to 10 mm<sup>2</sup> and the spacing between the second electrode and the tip electrode being in the range of 1.0 mm to about 3.5 mm.
2. The lead of claim 1 wherein the tip electrode comprises a helical tip electrode extending from the distal region of the lead.
3. The lead of claim 2 wherein the helical tip electrode is extendable and retractable relative to the distal region of the lead.
4. The lead of claim 1 wherein the second electrode comprises a ring electrode.
5. The lead of claim 1 further comprising an extendable helix operative to actively fixate the lead.

6. The lead of claim 2 wherein the helical tip electrode comprises a distal portion and a proximal portion, the distal portion comprising the electrically active portion of the tip electrode, and the proximal portion of the tip electrode being electrically insulating.
7. The lead of claim 1 further comprising:  
a steroid disposed on the distal region of the lead.
8. The lead of claim 1 further comprising:  
a cardioverting-defibrillating electrode disposed on the distal end of the lead proximal to the second electrode.
9. The lead of claim 8 wherein the cardioverting-defibrillating electrode is spaced from a distal extremity of the lead by a distance in the range of between about 5 and about 20 mm.
10. The lead of claim 1, wherein the lead body is configured for placement in the right atrium.
11. The lead of claim 1, wherein the lead body is configured for placement in at least one of a ventricle and a coronary sinus.
12. The lead of claim 1, further comprising passive fixation structure connected to the distal region of the lead.
13. An implantable medical electrical lead for transmitting electrical signals between an implantable medical device and cardiac tissue, the lead comprising:  
a lead body defining a proximal end comprising a connector assembly configured for connection to the implantable medical device, the lead body further defining a distal region;

a tip electrode connected to the distal region, and a second electrode spaced proximally from the tip electrode and connected to the lead body, the second electrode having a surface area in the range of 10 to 40 mm<sup>2</sup>, the tip electrode having an active surface area in the range of 3.0 to 10 mm<sup>2</sup> and the spacing between the second electrode and the tip electrode being in the range of 1.0 mm to about 3.5 mm.

14. The lead of claim 13 wherein the tip electrode comprises a helical tip electrode that is extendable from the distal end of the lead.

15. The lead of claim 14 wherein the helical tip electrode comprises a distal portion and a proximal portion, the distal portion comprising an electrically active portion of the tip electrode, and the proximal portion of the tip electrode being electrically insulating.

16. The lead of claim 13 further comprising:  
a steroid disposed on the distal end of the lead distal to the second electrode.

17. The lead of claim 13 further comprising:  
a cardioverting-defibrillating electrode disposed on the distal end of the lead proximal to the second electrode.

18. An implantable medical electrical lead for transmitting electrical signals between an implantable medical device and cardiac tissue, the lead comprising:

a lead body defining a proximal end comprising a connector assembly configured for connection to the implantable medical device, the lead body further defining a distal region;

a helical tip electrode extending from the distal region, and a second electrode spaced proximally from the helical tip electrode

and connected to the lead body, the second electrode having a surface area in the range of 14 to 40 mm<sup>2</sup>, the helical tip electrode having an active surface area in the range of 3.0 to 10 mm<sup>2</sup> and the spacing between the second electrode and the helical tip electrode being in the range of 1.0 mm to about 3.5 mm.

19. The lead of claim 18 wherein the helical tip electrode is extendable and retractable relative to the distal region of the lead.

20. The lead of claim 18 wherein the helical tip electrode comprises a distal portion and a proximal portion, the distal portion comprising the electrically active portion of the tip electrode, and the proximal portion of the tip electrode being electrically insulating.

21. The lead of claim 18 further comprising:  
a steroid disposed on the distal region of the lead.

22. The lead of claim 18, wherein the lead body is configured for placement in the right atrium.

23. The lead of claim 18, wherein the lead body is configured for placement in at least one of a ventricle and a coronary sinus.